SEQUENCE LISTING

<110>   Alphey, Luke

<120>   STABLE INTEGRANDS

<130>   138-05

<140>   10/562,843
<141>   2005-12-28

<150>   PCT/GB04/02869
<151>   2004-07-01

<150>   UK 0315379.8
<151>   2003-07-01

<160>   20

<170>   PatentIn version 3.2

<210>   1
<211>   12
<212>   DNA
<213>   Artificial sequence

<220>
<223>   Synthetic

<400>   1
ttaattaatt aa   12

<210>   2
<211>   12
<212>   DNA
<213>   Artificial sequence

<220>
<223>   Synthetic

<400>   2
ttaactagtt aa   12

<210>   3
<211>   16157
<212>   DNA
<213>   Artificial sequence

<220>
<223>   Synthetic Construct Predicted sequence of pLA1025 construct

<400>   3
gggcaattcg ggcgcgcctc ttaattaagg cccccccctcg agaccatggt cgatcgacaa   60

acacgaaaat acattcctgg acagacctag gggtttgctc tttttttcttt gcaggatctg   120

gattcaacaa agaaggaaaa atctacggag tttggaacct catttattgc acgaagaaac   180

ttagagagaa agactgatgc ctaataaaga ctcaagctga ttgcaaaaac aatataaagt   240

tgtaccttat tgcggtgtca tcgtaaaacc aagatgctta aaagggatta ggcccactta   300

aattactgcg aaaaatttta tttacaaatt tctcacatga cttccagata aactaattaa   360

ctttgtgtgt caaggttgct tttccggcag aaaagtcaat ttgcaagtga tttaggtttt   420

tttaatgact atctttgcaa ttgaattggg tactattaga tattgaatat accaatattg   480

aggtataata caaatacaac aacatttgac ctcggcaact atcagaagta catgtaggtc   540

gggaacatta gggaattctg cgcgataagt tactaattat gctaagctat cgcagaacct   600

cattaagact tgagctgcag tgttttgcag gtacttatca tatttacagt attaatgtat   660

gcagtattat attaattcta aataagaaag tcaggagaag gatattcaaa actgaagaat   720

taatgtacat tagtttttgtt tattagattt tcaatattgc agcatagaat atgtgtaagt   780

agtggagagc taaacgcgct tttcagaacg ttcatgctaa ttgctcatgg atctcacagg   840

aacaggtggt ggcggccctc ggtgcgctcg tactgctcca cgatggtgta gtcctcgttg   900

tgggaggtga tgtccagctt ggcgtccacg tagtagtagc cgggcagctg cacgggcttc   960

ttggccatgt agatggactt gaactccacc aggtagtggc cgccgtcctt cagcttcagg   1020

gccttgtggg tctcgccctt cagcacgccg tcgcggggggt acaggcgctc ggtggaggcc   1080

tcccagccca tggtcttctt ctgcatcacg gggccgtcgg aggggaagtt cacgccgatg   1140

aacttcacct tgtagatgaa gcagccgtcc tgcagggagg agtcctgggt cacggtcgcc   1200

acgccgccgt cctcgaagtt catcacgcgc tcccacttga agccctcggg gaaggacagc   1260

ttcttgtagt cggggatgtc ggcggggtgc ttcacgtaca ccttggagcc gtactggaac   1320

tgggggggaca ggatgtccca ggcgaagggc aggggggccgc ccttggtcac cttcagcttc   1380

acggtgttgt ggccctcgta ggggcggccc tcgccctcgc cctcgatctc gaactcgtgg   1440

ccgttcacgg tgccctccat gcgcaccttg aagcgcatga actcggtgat gacgttctcg   1500

gaggaggcca ttctagccat tttggttcta gatccggggt ctctggatta gacgactgct   1560

ggctgatgga gcggctttgt gtcgggagga gtatccacac agcacaagaa ctcaaacggt   1620

agtgatatga aaactggtcc cgcagcccgt tttataaagc ccgcttagcg ctaaaacctt   1680

atcagccgca atgctctccg ctctcaagtc gcgttcaaaa cttttaccat atatgggtat   1740

gaattgttcg ccgattgggt tttcatttac ggagaatttc ctccgcaact gggtgttcgt   1800

gcttgtgtgt gtcttgtata tcgccatgaa gagtgtactt ccatgggtcc tatcagttgc   1860

ggcatgtgat tcaatttggg ggttactcat attcgatact tcagctggtt atctttatgc   1920

tgtgatggtc acggtgcttt tacacatttt ttccccaact actcattgta tgccaaaaca   1980

tacatatgta catgtgttta tagtgggttt attagtaatg tccagcgata ttaaaacatt   2040

```
acagttaaat aatattcata ttagcttacg tttactgcta tctgcacttc aaattggtta   2100

ttcagggaca tttgtgcaac acacatcttc tagtaggggc atcactagtc gtagaaaaca   2160

cacctaactt aagccggttt taacaataac ggcgaaacag ctgccagacg agagaaaagt   2220

acacagcaag aagcatttct ataatgatgc cgtcctaaat atgcagcatt tttgctcaaa   2280

ttgatcattt cgttgcatcg ctcaggtggt atagtatttg gctattgaat gtgattgcta   2340

tcttaatagt tttgaatagt aatagtgcaa atattcattc ataaaaaata ggtaatcgat   2400

tttctcagtg cagtctatgc gtttgcgcaa acaggagacg aagagagaga cgcctcacac   2460

acaagcacat gcgtactacg ctggcctact ccgctactct atgtgtcgtc ctctgcatcg   2520

tctgcttggc ggcagttctt ccagaggctg tgacgtcagg taagctattt cgtctcggtg   2580

tgctgttagc ccgtaacgat aagctgtccg attcctaatt ctctttcaaa taatttgttt   2640

tatttttttt tttgtgtgtt ttgaagtcaa acagcttcat aaacaatatt aaatatcgca   2700

attgttattg caaatgcatt cgtatcaggc gccttgatgt ttttcggcca aaacttcgtc   2760

tgctctttgt cagcgtaatt gcgtttgccg gtcgtgccgt cttgctcgca cgcgcttgca   2820

aacaaaaagt gaaagaggga aagccactgt gttgttgctt ttgttgctat cgttggctgc   2880

acacacatgg caataagtaa ccatattgta gacttattta tttttagcgtt ttcgttgact   2940

aatctttgtt taaataattg cctatttcga gccaaaatga cgcataaagg acacggcaac   3000

atgcggtgcg ttgagcatgc gtacgagatg cgcctagaga gagcgagata aaaagaaaaa   3060

aacaaccggc gagtggcgag acacgaataa tacacacacg cacacatggt caaaggagtg   3120

gctccaacgt cggtgacgtc gcgcccagcc acagaccccg ccacgccccg ccccacccctt   3180

ccttccgctg ccccgcaccc ctttccttcc actaccgttt tgccgcattt ggtattgcca   3240

tctcgctttt ttggctttac tttgctttt gaataagcca agaaactgaa atcaaagcgg   3300

acagtccgaa aattgaaact attccaaaaa acaacaaccg cacatgcact gcgttcggca   3360

aaagacgcag aaatcagcct gtggtctggc atcatcttaa aatatcatca gtatcatcat   3420

tgccattata aatacataag aaaatgagaa tacattaaag gtatatacat acaatctttg   3480

tcatagtcaa catattttgc aacaaaatta tctatagata acatgttttt gtagaaaatt   3540

ccactaactg attttcgtat aaatacaaat tattctcatt cttcaaaata ctcgccgacg   3600

tcatcgcgaa attcctcagc attcttcgac aaatgaagag agacagcgag tgacacaatc   3660

ttatcttacc gacgagtctt tgaaaatggc cccgggaacg gtgaaaaaca tatagccaag   3720

aatggagcga tcgccaggcg atggaaattg gcttcaaatt gctccgaata tggccagttg   3780

gtcagttggc attggattgt ggagagatac tagatcagct cgttctcctt ctcctccgca   3840

ttctcctact cgcccgaaga cgcttctttg atcgcttctt tctcgaatgt acatattgat   3900
```

```
atgtatttgg tgtttggcga cgatcagcca gctttaatgg ccataaaacg tgtcttggtt   3960

tgtgggccac ataacaggca gcgagatctg gaaaaatgat gtgacagtgg aaatgagaag   4020

taggtgcatc tgcaaagatt tgattcagag ttgatgccat tcatgatttt ttttagaagt   4080

atcatttgtg tttttagaat atagaattct agtatgtatg taagttaata aaacccattt   4140

ttgcggaaag tagataaaaa aaacattttt ttttttttact gcactggata tctgcggccg   4200

gccagtttaa ccctagaaag ataatcatat tgtgacgtac gttaaagata atcatgcgta   4260

aaattgacgc atgggtacca gatatccagt gcagtaaaaa aaaaaaatgt tttttttatc   4320

tactttccgc aaaaatgggt tttattaact tacatacata ctagaattct aaaaaaaatc   4380

atgaatggca tcaactctga atcaaatctt tgcagatgca cctacttctc atttccactg   4440

tcacatcatt tttccagatc tcgctgcctg ttatgtggcc cacaaaccaa gacacgtttt   4500

atggccatta aagctggctg atcgtcgcca aacaccaaat acatatcaat atgtacattc   4560

gagaaagaag cgatcaaaga agcgtcttcg ggcgagtagg agaatgcgga ggagaaggag   4620

aacgagctga tctagtatct ctccacaatc caatgccaac tgaccaactg gccatattcg   4680

gagcaatttg aagccaattt ccatcgcctg gcgatcgctc cattcttggc tatatgtttt   4740

tcaccgttcc cggggccatt ttcaaagact cgtcggtaag ataagattgt gtcactcgct   4800

gtctctcttc atttgtcgaa gaatgctgag gaatttcgcg atgacgtcgg cgagtatttt   4860

gaagaatgag aataatttgt atttatacga aaatcagtta gtggaatttt ctacaaaaac   4920

atgttatcta tagataattt tgttgcaaaa tatgttgact atgacaaaga ttgtatgtat   4980

ataccttttaa tgtattctca ttttcttatg tatttataat ggcaatgatg atactgatga   5040

tattttaaga tgatgccaga ccacaggctg atttctgcgt cttttgccga acgcagtgca   5100

tgtgcggttg ttgttttttg gaatagtttc aattttcgga ctgtccgctt tgatttcagt   5160

ttcttggctt attcaaaaag caaagtaaag ccaaaaaagc gagatggcaa taccaaatgc   5220

ggcaaaacgg tagtggaagg aaaggggtgc ggggcagcgg aaggaagggt ggggcggggc   5280

gtggcggggt ctgtggctgg gcgcgacgtc accgacgttg gagccactcc tttgaccatg   5340

tgtgcgtgtg tgtattattc gtgtctcgcc actcgccggt tgttttttttc tttttatctc   5400

gctctctcta gcgccatctc gtacgcatgc tcaacgcacc gcatgttgcc gtgtcctta   5460

tgcgtcattt tggctcgaaa taggcaatta tttaaacaaa gattagtcaa cgaaaacgct   5520

aaaataaata agtctacaat atggttactt attgccatgt gtgtgcagcc aacgatagca   5580

acaaaagcaa caacacagtg gctttccctc tttcactttt tgtttgcaag cgcgtgcgag   5640

caagacggca cgaccggcaa acgcaattac gctgacaaag agcagacgaa gttttggccg   5700

aaaaacatca aggcgcctga tacgaatgca tttgcaataa caattgcgat atttaatatt   5760
```

```
gtttatgaag ctgtttgact tcaaaacaca caaaaaaaaa aataaaacaa attatttgaa    5820

agagaattag gaatcggaca gcttatcgtt acgggctaac agcacaccga gacgaaatag    5880

cttacctgac gtcacagcct ctggaagaac tgccgccaag cagacgatgc agaggacgac    5940

acatagagta gcggagtagg ccagcgtagt acgcatgtgc ttgtgtgtga ggcgtctctc    6000

tcttcgtctc ctgtttgcgc aaacgcatag actgcactga gaaaatcgat tacctatttt    6060

ttatgaatga atatttgcac tattactatt caaaactatt aagatagcaa tcacattcaa    6120

tagccaaata ctataccacc tgagcgatgc aacgaaatga tcaatttgag caaaaatgct    6180

gcatatttag gacggcatca ttatagaaat gcttcttgct gtgtactttt ctctcgtctg    6240

gcagctgttt cgccgttatt gttaaaaccg gcttaagtta ggtgtgtttt ctacgactag    6300

tgatgcccct actagaagat gtgtgttgca caaatgtccc tgaataacca atttgaagtg    6360

cagatagcag taaacgtaag ctaatatgaa tattatttaa ctgtaatgtt ttaatatcgc    6420

tggacattac taataaaccc actataaaca catgtacata tgtatgtttt ggcatacaat    6480

gagtagttgg ggaaaaaatg tgtaaaagca ccgtgaccat cacagcataa agataaccag    6540

ctgaagtatc gaatatgagt aaccccaaaa ttgaatcaca tgccgcaact gataggaccc    6600

atggaagtac actcttcatg gcgatataca agacacacac aagcacgaac acccagttgc    6660

ggaggaaatt ctccgtaaat gaaaacccaa tcggcgaaca attcataccc atatatggta    6720

aaagttttga acgcgacttg agagcggaga gcattgcggc tgataaggtt ttagcgctaa    6780

gcgggcttta taaacgggc tgcgggacca gttttcatat cactaccgtt tgagttcttg    6840

tgctgtgtgg atactcctcc cgacacaaag ccgctccatc agccagcagt cgtctaatcc    6900

agagaccccg gatctagaac caaaatggct agcaaaggag aagaactttt cactggagtt    6960

gtcccaattc ttgttgaatt agatggtgat gttaatgggc acaaattttc tgtcagtgga    7020

gagggtgaag gtgatgcaac atacggaaaa cttaccctta aatttatttg cactactgga    7080

aaactacctg ttccatggcc aacacttgtc actactttca cttatggtgt tcaatgcttt    7140

tcaagatacc cagatcatat gaaacagcat gactttttca agagtgccat gcccgaaggt    7200

tatgtacagg aaagaactat attttttcaaa gatgacggga actacaagac acgtgctgaa    7260

gtcaagtttg aaggtgatac ccttgttaat agaatcgagt aaaaggtat tgattttaaa    7320

gaagatggaa acattcttgg acacaaattg gaatacaact ataactcaca caatgtatac    7380

atcatggcag acaaacaaaa gaatggaatc aaagttaact tcaaaattag acacaacatt    7440

gaagatggaa gcgttcaact agcagaccat tatcaacaaa atactccaat tggcgatggc    7500

cctgtccttt taccagacaa ccattacctg tccacacaat ctgccctttc gaaagatccc    7560

aacgaaaaga gagaccacat ggtccttctt gagtttgtaa cagctgctgg gattacacat    7620

ggcatggatg aactatacaa ataaggatcc atgagcaatt agcatgaacg ttctgaaaag    7680
```

```
cgcgtttagc tctccactac ttacacatat tctatgctgc aatattgaaa atctaataaa   7740

caaaactaat gtacattaat tcttcagttt tgaatatcct tctcctgact ttcttattta   7800

gaattaatat aatactgcat acattaatac tgtaaatatg ataagtacct gcaaaacact   7860

gcagctcaag tcttaatgag gttctgcgat agcttagcat aattagtaac ttatcgcgca   7920

gaattcccta atgttcccga cctacatgta cttctgatag ttgccgaggt caaatgttgt   7980

tgtatttgta ttatacctca atattggtat attcaatatc taatagtacc caattcaatt   8040

gcaaagatag tcattaaaaa aacctaaatc acttgcaaat tgacttttct gccggaaaag   8100

caaccttgac acacaaagtt aattagttta tctggaagtc atgtgagaaa tttgtaaata   8160

aaatttttcg cagtaattta agtgggccta atccctttta agcatcttgg ttttacgatg   8220

acaccgcaat aaggtacaac tttatattgt ttttgcaatc agcttgagtc tttattaggc   8280

atcagtcttt ctctctaagt ttcttcgtgc aataaatgag gttccaaact ccgtagattt   8340

ttccttcttt gttgaatcca gatcctgcaa agaaaaaaga gcaaacccct aggtctgtcc   8400

aggaatgtat tttcgtgttt gtcgatcgac catggtcacc ggtagatatc tataacaaga   8460

aaatatatat ataataagtt atcacgtaag tagaacatga aataacaata taattatcgt   8520

atgagttaaa tcttaaaagt cacgtaaaag ataatcatgc gtcattttga ctcacgcggt   8580

cgttatagtt caaaatcagt gacacttacc gcattgacaa gcacgcctca cgggagctcc   8640

aagcggcgac tgagatgtcc taaatgcaca gcgacggatt cgcgctattt agaaagagag   8700

agcaatattt caagaatgca tgcgtcaatt ttacgcagac tatctttcta gggttaagtc   8760

gacatccaca ttgtggccaa gctgtgtgac gcgacgcgcg ctaaagaatg gcaaaccaag   8820

tcgcgcgagc gtcgaaattc gtaatcatgg tcatagctgt ttcctgtgtg aaattgttat   8880

ccgctcacaa ttccacacaa catacgagcc ggaagcataa agtgtaaagc ctggggtgcc   8940

taatgagtga gctaactcac attaattgcg ttgcgctcac tgcccgcttt ccagtcggga   9000

aacctgtcgt gccagctgca ttaatgaatc ggccaacgcg cggggagagg cggtttgcgt   9060

attgggcgct cttccgcttc ctcgctcact gactcgctgc gctcggtcgt tcggctgcgg   9120

cgagcggtat cagctcactc aaaggcggta atacggttat ccacagaatc aggggataac   9180

gcaggaaaga acatgtgagc aaaaggccag caaaaggcca ggaaccgtaa aaaggccgcg   9240

ttgctggcgt ttttccatag gctccgcccc cctgacgagc atcacaaaaa tcgacgctca   9300

agtcagaggt ggcgaaaccc gacaggacta taaagatacc aggcgtttcc ccctggaagc   9360

tccctcgtgc gctctcctgt ccgaccctg ccgcttaccg gatacctgtc cgcctttctc    9420

ccttcgggaa gcgtggcgct ttctcaatgc tcacgctgta ggtatctcag ttcggtgtag   9480

gtcgttcgct ccaagctggg ctgtgtgcac gaaccccccg ttcagcccga ccgctgcgcc   9540
```

```
ttatccggta actatcgtct tgagtccaac ccggtaagac acgacttatc gccactggca    9600

gcagccactg gtaacaggat tagcagagcg aggtatgtag gcggtgctac agagttcttg    9660

aagtggtggc ctaactacgg ctacactaga aggacagtat ttggtatctg cgctctgctg    9720

aagccagtta ccttcggaaa aagagttggt agctcttgat ccggcaaaca aaccaccgct    9780

ggtagcggtg gtttttttgt ttgcaagcag cagattacgc gcagaaaaaa aggatctcaa    9840

gaagatcctt tgatcttttc tacggggtct gacgctcagt ggaacgaaaa ctcacgttaa    9900

gggattttgg tcatgagatt atcaaaaagg atcttcacct agatcctttt aaattaaaaa    9960

tgaagtttta aatcaatcta aagtatatat gagtaaactt ggtctgacag ttaccaatgc   10020

ttaatcagtg aggcacctat ctcagcgatc tgtctatttc gttcatccat agttgcctga   10080

ctccccgtcg tgtagataac tacgatacgg gagggcttac catctggccc cagtgctgca   10140

atgataccgc gagacccacg ctcaccggct ccagatttat cagcaataaa ccagccagcc   10200

ggaagggccg agcgcagaag tggtcctgca actttatccg cctccatcca gtctattaat   10260

tgttgccggg aagctagagt aagtagttcg ccagttaata gtttgcgcaa cgttgttgcc   10320

attgctacag gcatcgtggt gtcacgctcg tcgtttggta tggcttcatt cagctccggt   10380

tcccaacgat caaggcgagt tacatgatcc cccatgttgt gcaaaaaagc ggttagctcc   10440

ttcggtcctc cgatcgttgt cagaagtaag ttggccgcag tgttatcact catggttatg   10500

gcagcactgc ataattctct tactgtcatg ccatccgtaa gatgcttttc tgtgactggt   10560

gagtactcaa ccaagtcatt ctgagaatag tgtatgcggc gaccgagttg ctcttgcccg   10620

gcgtcaatac gggataatac cgcgccacat agcagaactt taaaagtgct catcattgga   10680

aaacgttctt cggggcgaaa actctcaagg atcttaccgc tgttgagatc cagttcgatg   10740

taacccactc gtgcacccaa ctgatcttca gcatctttta ctttcaccag cgtttctggg   10800

tgagcaaaaa caggaaggca aaatgccgca aaaaagggaa taagggcgac acggaaatgt   10860

tgaatactca tactcttcct ttttcaatat tattgaagca tttatcaggg ttattgtctc   10920

atgagcggat acatatttga atgtatttag aaaaataaac aaatagggggt tccgcgcaca   10980

tttccccgaa aagtgccacc tgacgtctaa gaaaccatta ttatcatgac attaacctat   11040

aaaaatoggc gtatcacgag gccctttcgt ctcgcgcgtt tcggtgatga cggtgaaaac   11100

ctctgacaca tgcagctccc ggagacggtc acagcttgtc tgtaagcgga tgccgggagc   11160

agacaagccc gtcagggcgc gtcagcgggt gttggcgggt gtcggggctg gcttaactat   11220

gcggcatcag agcagattgt actgagagtg caccatatat gcggtgtgaa ataccgcaca   11280

gatgcgtaag gagaaaatac cgcatcaggc gccattcgcc attcaggctg cgcaactgtt   11340

gggaagggcg atcggtgcgg gcctcttcgc tattacgcca gctggcgaaa gggggatgtg   11400
```

```
ctgcaaggcg attaagttgg gtaacgccag ggttttccca gtcacgacgt tgtaaaacga   11460

cggccagtgc caagctttgt ttaaaatata acaaaattgt gatcccacaa aatgaagtgg   11520

ggcaaaatca aataattaat agtgtccgta aacttgttgg tcttcaactt tttgaggaac   11580

acgttggacg gcaaatccgt gactataaca caagttgatt taataatttt agccaacacg   11640

tcgggctgcg tgttttttgc cgacgcgtct gtgtacacgt tgattaactg gtcgattaaa   11700

ctgttgaaat aatttaattt ttggttcttc tttaaatctg tgatgaaatt ttttaaaata   11760

actttaaatt cttcattggt aaaaaatgcc acgttttgca acttgtgagg gtctaatatg   11820

aggtcaaact cagtaggagt tttatccaaa aaagaaaaca tgattacgtc tgtacacgaa   11880

cgcgtattaa cgcagagtgc aaagtataag agggttaaaa aatatatttt acgcaccata   11940

tacgcatcgg gttgatatcg ttaatatgga tcaatttgaa cagttgatta acgtgtctct   12000

gctcaagtct ttgatcaaaa cgcaaatcga cgaaaatgtg tcggacaata tcaagtcgat   12060

gagcgaaaaa ctaaaaaggc tagaatacga caatctcaca gacagcgttg agatatacgg   12120

tattcacgac agcaggctga ataataaaaa aattagaaac tattatttaa ccctagaaag   12180

ataatcatat tgtgacgtac gttaaagata atcatgcgta aaattgacgc atgtgtttta   12240

tcggtctgta tatcgaggtt tatttattaa tttgaataga tattaagttt tattatattt   12300

acacttacat actaataata aattcaacaa acaatttatt tatgtttatt tatttattaa   12360

aaaaaaacaa aaactcaaaa tttcttctat aaagtaacaa aacttttaaa cattctctct   12420

tttacaaaaa taaacttatt ttgtactttta aaaacagtca tgttgtatta taaaataagt   12480

aattagctta acttatacat aatagaaaca aattatactt attagtcagt cagaaacaac   12540

tttggcacat atcaatatta tgctctcgac aaataacttt tttgcatttt ttgcacgatg   12600

catttgcctt tcgccttatt ttagaggggc agtaagtaca gtaagtacgt tttttcatta   12660

ctggctcttc agtactgtca tctgatgtac caggcacttc atttggcaaa atattagaga   12720

tattatcgcg caaatatctc ttcaaagtag gagcttctaa acgcttacgc ataaacgatg   12780

acgtcaggct catgtaaagg tttctcataa attttttgcg actttggacc ttttctccct   12840

tgctactgac attatggctg tatataataa aagaatttat gcaggcaatg tttatcattc   12900

cgtacaataa tgccataggc cacctattcg tcttcctact gcaggtcatc acagaacaca   12960

tttggtctag cgtgtccact ccgcctttag tttgattata atacataacc atttgcggtt   13020

taccgggcgc ctcttaatta aggcccccccc tcgagaccat ggtcgatcga caaacacgaa   13080

aatacattcc tggacagacc taggggtttg ctcttttttc tttgcaggat ctggattcaa   13140

caaagaagga aaaatctacg gagtttggaa cctcatttat tgcacgaaga aacttagaga   13200

gaaagactga tgcctaataa agactcaagc tgattgcaaa aacaatataa agttgtacct   13260

tattgcggtg tcatcgtaaa accaagatgc ttaaaaggga ttaggcccac ttaaattact   13320
```

```
gcgaaaaatt ttatttacaa atttctcaca tgacttccag ataaactaat taactttgtg   13380

tgtcaaggtt gcttttccgg cagaaaagtc aatttgcaag tgatttaggt tttttttaatg  13440

actatctttg caattgaatt gggtactatt agatattgaa tataccaata ttgaggtata   13500

atacaaatac aacaacattt gacctcggca actatcagaa gtacatgtag gtcgggaaca   13560

ttagggaatt ctgcgcgata agttactaat tatgctaagc tatcgcagaa cctcattaag   13620

acttgagctg cagtgttttg caggtactta tcatatttac agtattaatg tatgcagtat   13680

tatattaatt ctaaataaga aagtcaggag aaggatattc aaaactgaag aattaatgta   13740

cattagtttt gtttattaga ttttcaatat tgcagcatag aatatgtgta agtagtggag   13800

agctaaacgc gcttttcaga acgttcatgc taattgctca tggatctcac aggaacaggt   13860

ggtggcggcc ctcggtgcgc tcgtactgct ccacgatggt gtagtcctcg ttgtgggagg   13920

tgatgtccag cttggcgtcc acgtagtagt agccgggcag ctgcacgggc ttcttggcca   13980

tgtagatgga cttgaactcc accaggtagt ggccgccgtc cttcagcttc agggccttgt   14040

gggtctcgcc cttcagcacg ccgtcgcggg ggtacaggcg ctcggtggag gcctcccagc   14100

ccatggtctt cttctgcatc acggggccgt cggaggggaa gttcacgccg atgaacttca   14160

ccttgtagat gaagcagccg tcctgcaggg aggagtcctg ggtcacggtc gccacgccgc   14220

cgtcctcgaa gttcatcacg cgctcccact tgaagccctc ggggaaggac agcttcttgt   14280

agtcggggat gtcggcgggg tgcttcacgt acaccttgga gccgtactgg aactgggggg   14340

acaggatgtc ccaggcgaag ggcagggggc cgcccttggt caccttcagc ttcacggtgt   14400

tgtggccctc gtaggggcgg ccctcgccct cgccctcgat ctcgaactcg tggccgttca   14460

cggtgccctc catgcgcacc ttgaagcgca tgaactcggt gatgacgttc tcggaggagg   14520

ccattctagc cattttggtt ctagatggca gttgtttatc tggaagggag atggaagtgc   14580

actcggttag ctcgatctgt cgattatata tgtaaagttt tatagctccc acctacatct   14640

caattctttta aattctacta ctttaatgac aacatagaaa actaatttgt gtctcaagaa  14700

aatatttaac tttttaagat attgaagaag tgaagtgaaa ctctattgtc catttgagca   14760

catttcagta aataaaacca tgaaaaattg ccaaaattgg tatattccat ttccttttga   14820

gtcatgctaa ttggttattc acttgaaact aaatcagtgc tctaaaaata tcggaaaaga   14880

atagttcata gaacttaatt taaacgtatc aaattaattg aaaatacgtt tcgttgcaat   14940

tactcttcac tttatattta gatattgaac tttcgaagac cgattagtga cttgtagaaa   15000

aatccatcaa acaatccgaa cttattaaaa agagttttaa tatccttagt cctcttggct   15060

ttttctgtaa taatccttgg atccttcgac attgaggtcg cactcacaca ccttttaggt   15120

caacgaaagg agaaaaattg gatagagtcg cacgttcgat tcctgttgac aactagattc   15180
```

```
aacaacaaat ggcacgccga tcggtctgtc ctgcctttat atctcggctc tccctcgaag   15240

cgatttgagt tggatgccag tgcggcactg agaaaaagat tgagcgaaag tgctgcggaa   15300

caatcaactc gaatcgatcc atataagcag ttttcagact tctggccgag catgtcagaa   15360

gtttggatgc ctcattgcac gaagacgact cattaatgcg cttcacaaaa aaaggaagcc   15420

acacaattaa atacttaata aagcatagaa tcatttatta agattaccaa taaattcaat   15480

aaacgaggga atttccaaac tgcgaaaata tgacatttta tattttttc acattgttag    15540

taggtacaaa tcctagaaaa tggtctcata acatataaca gcttaaataa ctatgtagta   15600

gaagataaac tttatgttca attcagttca tatttaatcc tagaaatatt taattaattg   15660

acaatatatg atggaagtaa gctatcaatc ttaggaccct attcattatt tgtagggagt   15720

gccaggagag agaaagctct cgaaagataa gagaacgcca tagccgagtg attagcagag   15780

gtgcgtgata gtcggtgtat gggccaccta aacggcaatc agcactctcg agtggccaat   15840

tagccccatc tccgtcccca tctctgtccc aatcctgctg ccaatgggcg actgctgcgg   15900

cggacgactc attcggtgct gagagttcgg aaaatagaaa cggaccttag aaggaccgac   15960

gcaagacaat tggcatccgc ggcagggact gggagaatgg gacatttcaa cgggcacgca   16020

gcgaggcgaa tctaaaatag acgcgccaag cagagcggca cctataaatc aacatcaagg   16080

ttgatcgaga tatccaccca tctgcggccg ccatgcgtca attttacgca gactatcttt   16140

ctagggttaa tcagccc                                                  16157
```

<210> 4
<211> 16157
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic Construct Predicted sequence of pLA1125 construct

<400> 4
```
gggcaattcg ggcgcgcctc ttaattaagg ccccccctcg agaccatggt cgatcgacaa    60

acacgaaaat acattcctgg acagacctag gggtttgctc ttttttcttt gcaggatctg   120

gattcaacaa agaaggaaaa atctacggag tttggaacct catttattgc acgaagaaac   180

ttagagagaa agactgatgc ctaataaaga ctcaagctga ttgcaaaaac aatataaagt   240

tgtaccttat tgcggtgtca tcgtaaaacc aagatgctta aaagggatta ggcccactta   300

aattactgcg aaaaatttta tttacaaatt tctcacatga cttccagata aactaattaa   360

ctttgtgtgt caaggttgct tttccggcag aaaagtcaat ttgcaagtga tttaggtttt   420

tttaatgact atctttgcaa ttgaattggg tactattaga tattgaatat accaatattg   480

aggtataata caaatacaac aacatttgac ctcggcaact atcagaagta catgtaggtc   540
```

```
gggaacatta gggaattctg cgcgataagt tactaattat gctaagctat cgcagaacct    600

cattaagact tgagctgcag tgttttgcag gtacttatca tatttacagt attaatgtat    660


gcagtattat attaattcta aataagaaag tcaggagaag gatattcaaa actgaagaat    720

taatgtacat tagttttgtt tattagattt tcaatattgc agcatagaat atgtgtaagt    780

agtggagagc taaacgcgct tttcagaacg ttcatgctaa ttgctcatgg atctcacagg    840

aacaggtggt ggcggccctc ggtgcgctcg tactgctcca cgatggtgta gtcctcgttg    900

tgggaggtga tgtccagctt ggcgtccacg tagtagtagc cgggcagctg cacgggcttc    960

ttggccatgt agatggactt gaactccacc aggtagtggc cgccgtcctt cagcttcagg   1020

gccttgtggg tctcgccctt cagcacgccg tcgcgggggt acaggcgctc ggtggaggcc   1080

tcccagccca tggtcttctt ctgcatcacg gggccgtcgg aggggaagtt cacgccgatg   1140

aacttcacct tgtagatgaa gcagccgtcc tgcagggagg agtcctgggt cacggtcgcc   1200

acgccgccgt cctcgaagtt catcacgcgc tcccacttga agccctcggg gaaggacagc   1260

ttcttgtagt cggggatgtc ggcggggtgc ttcacgtaca ccttggagcc gtactggaac   1320

tggggggaca ggatgtccca ggcgaagggc aggggccgc ccttggtcac cttcagcttc   1380

acggtgttgt ggccctcgta ggggcggccc tcgccctcgc cctcgatctc gaactcgtgg   1440

ccgttcacgg tgccctccat gcgcaccttg aagcgcatga actcggtgat gacgttctcg   1500

gaggaggcca ttctagccat tttggttcta gatccggggt ctctggatta gacgactgct   1560

ggctgatgga gcggctttgt gtcgggagga gtatccacac agcacaagaa ctcaaacggt   1620

agtgatatga aaactggtcc cgcagcccgt tttataaagc ccgcttagcg ctaaaacctt   1680

atcagccgca atgctctccg ctctcaagtc gcgttcaaaa cttttaccat atatgggtat   1740

gaattgttcg ccgattgggt tttcatttac ggagaatttc ctccgcaact gggtgttcgt   1800

gcttgtgtgt gtcttgtata tcgccatgaa gagtgtactt ccatgggtcc tatcagttgc   1860

ggcatgtgat tcaatttggg ggttactcat attcgatact tcagctggtt atctttatgc   1920

tgtgatggtc acggtgcttt tacacatttt ttccccaact actcattgta tgccaaaaca   1980

tacatatgta catgtgttta tagtgggttt attagtaatg tccagcgata ttaaaacatt   2040

acagttaaat aatattcata ttagcttacg tttactgcta tctgcacttc aaaattggtta  2100

ttcagggaca tttgtgcaac acacatcttc tagtaggggc atcactagtc gtagaaaaca   2160

cacctaactt aagccggttt taacaataac ggcgaaacag ctgccagacg agagaaaagt   2220

acacagcaag aagcatttct ataatgatgc cgtcctaaat atgcagcatt tttgctcaaa   2280

ttgatcattt cgttgcatcg ctcaggtggt atagtatttg gctattgaat gtgattgcta   2340

tcttaatagt tttgaatagt aatagtgcaa atattcattc ataaaaaata ggtaatcgat   2400
```

```
tttctcagtg cagtctatgc gtttgcgcaa acaggagacg aagagagaga cgcctcacac   2460

acaagcacat gcgtactacg ctggcctact ccgctactct atgtgtcgtc ctctgcatcg   2520

tctgcttggc ggcagttctt ccagaggctg tgacgtcagg taagctattt cgtctcggtg   2580

tgctgttagc ccgtaacgat aagctgtccg attcctaatt ctctttcaaa taatttgttt   2640

tatttttttt tttgtgtgtt ttgaagtcaa acagcttcat aaacaatatt aaatatcgca   2700

attgttattg caaatgcatt cgtatcaggc gccttgatgt ttttcggcca aaacttcgtc   2760

tgctctttgt cagcgtaatt gcgtttgccg gtcgtgccgt cttgctcgca cgcgcttgca   2820

aacaaaaagt gaaagaggga aagccactgt gttgttgctt ttgttgctat cgttggctgc   2880

acacacatgg caataagtaa ccatattgta gacttatttta ttttagcgtt ttcgttgact   2940

aatctttgtt taaataattg cctatttcga gccaaaatga cgcataaagg acacggcaac   3000

atgcggtgcg ttgagcatgc gtacgagatg gcgctagaga gagcgagata aaaagaaaaa   3060

aacaaccggc gagtggcgag acacgaataa tacacacacg cacacatggt caaaggagtg   3120

gctccaacgt cggtgacgtc gcgcccagcc acagaccccg ccacgccccg ccccaccctt   3180

ccttccgctg ccccgcaccc ctttccttcc actaccgttt tgccgcattt ggtattgcca   3240

tctcgctttt ttggctttac tttgctttttt gaataagcca agaaactgaa atcaaagcgg   3300

acagtccgaa aattgaaact attccaaaaa acaacaaccg cacatgcact gcgttcggca   3360

aaagacgcag aaatcagcct gtggtctggc atcatcttaa aatatcatca gtatcatcat   3420

tgccattata aatacataag aaaatgagaa tacattaaag gtatatacat acaatctttg   3480

tcatagtcaa catattttgc aacaaaatta tctatagata acatgttttt gtagaaaatt   3540

ccactaactg attttcgtat aaatacaaat tattctcatt cttcaaaata ctcgccgacg   3600

tcatcgcgaa attcctcagc attcttcgac aaatgaagag agacagcgag tgacacaatc   3660

ttatcttacc gacgagtctt tgaaaatggc cccgggaacg gtgaaaaaca tatagccaag   3720

aatggagcga tcgccaggcg atggaaattg gcttcaaatt gctccgaata tggccagttg   3780

gtcagttggc attggattgt ggagagatac tagatcagct cgttctcctt ctcctccgca   3840

ttctcctact cgcccgaaga cgcttctttg atcgcttctt tctcgaatgt acatattgat   3900

atgtatttgg tgtttggcga cgatcagcca gctttaatgg ccataaaacg tgtcttggtt   3960

tgtgggccac ataacaggca gcgagatctg gaaaaatgat gtgacagtgg aaatgagaag   4020

taggtgcatc tgcaaagatt tgattcagag ttgatgccat tcatgatttt ttttagaagt   4080

atcatttgtg tttttagaat atagaattct agtatgtatg taagttaata aaacccattt   4140

ttgcggaaag tagataaaaa aaacattttt tttttttact gcactggata tctgcggccg   4200

gccagtttaa ccctagaaag ataatcatat tgtgacgtac gttaaagata atcatgcgta   4260

aaattgacgc atgggtacca gatatccagt gcagtaaaaa aaaaaaatgt ttttttatc    4320
```

```
tactttccgc aaaaatgggt tttattaact tacatacata ctagaattct aaaaaaaatc    4380

atgaatggca tcaactctga atcaaatctt tgcagatgca cctacttctc atttccactg    4440

tcacatcatt tttccagatc tcgctgcctg ttatgtggcc cacaaaccaa gacacgtttt    4500


atggccatta aagctggctg atcgtcgcca aacaccaaat acatatcaat atgtacattc    4560

gagaaagaag cgatcaaaga agcgtcttcg ggcgagtagg agaatgcgga ggagaaggag    4620

aacgagctga tctagtatct ctccacaatc caatgccaac tgaccaactg gccatattcg    4680

gagcaatttg aagccaattt ccatcgcctg gcgatcgctc cattcttggc tatatgtttt    4740

tcaccgttcc cggggccatt ttcaaagact cgtcggtaag ataagattgt gtcactcgct    4800

gtctctcttc atttgtcgaa gaatgctgag gaatttcgcg atgacgtcgg cgagtatttt    4860

gaagaatgag aataatttgt atttatacga aaatcagtta gtggaatttt ctacaaaaac    4920

atgttatcta tagataattt tgttgcaaaa tatgttgact atgacaaaga ttgtatgtat    4980

ataccttttaa tgtattctca ttttcttatg tatttataat ggcaatgatg atactgatga    5040

tattttaaga tgatgccaga ccacaggctg atttctgcgt cttttgccga acgcagtgca    5100

tgtgcggttg ttgttttttg gaatagtttc aattttcgga ctgtccgctt tgatttcagt    5160

ttcttggctt attcaaaaag caaagtaaag ccaaaaaagc gagatggcaa taccaaatgc    5220

ggcaaaacgg tagtggaagg aaaggggtgc ggggcagcgg aaggaagggt ggggcggggc    5280

gtggcggggt ctgtggctgg gcgcgacgtc accgacgttg gagccactcc tttgaccatg    5340

tgtgcgtgtg tgtattattc gtgtctcgcc actcgccggt tgttttttttc tttttatctc    5400

gctctctcta gcgccatctc gtacgcatgc tcaacgcacc gcatgttgcc gtgtccttta    5460

tgcgtcattt tggctcgaaa taggcaatta tttaaacaaa gattagtcaa cgaaaacgct    5520

aaaataaata agtctacaat atggttactt attgccatgt gtgtgcagcc aacgatagca    5580

acaaaagcaa caacacagtg gctttccctc tttcactttt tgtttgcaag cgcgtgcgag    5640

caagacggca cgaccggcaa acgcaattac gctgacaaag agcagacgaa gttttggccg    5700

aaaaacatca aggcgcctga tacgaatgca tttgcaataa caattgcgat atttaatatt    5760

gtttatgaag ctgtttgact tcaaaacaca caaaaaaaaa aataaaacaa attatttgaa    5820

agagaattag gaatcggaca gcttatcgtt acgggctaac agcacaccga gacgaaatag    5880

cttacctgac gtcacagcct ctggaagaac tgccgccaag cagacgatgc agaggacgac    5940

acatagagta gcggagtagg ccagcgtagt acgcatgtgc ttgtgtgtga ggcgtctctc    6000

tcttcgtctc ctgtttgcgc aaacgcatag actgcactga gaaaatcgat tacctatttt    6060

ttatgaatga atatttgcac tattactatt caaaactatt aagatagcaa tcacattcaa    6120

tagccaaata ctataccacc tgagcgatgc aacgaaatga tcaatttgag caaaaatgct    6180
```

gcatatttag gacggcatca ttatagaaat gcttcttgct gtgtactttt ctctcgtctg   6240

gcagctgttt cgccgttatt gttaaaaccg gcttaagtta ggtgtgtttt ctacgactag   6300

tgatgcccct actagaagat gtgtgttgca caaatgtccc tgaataacca atttgaagtg   6360

cagatagcag taaacgtaag ctaatatgaa tattatttaa ctgtaatgtt ttaatatcgc   6420

tggacattac taataaaccc actataaaca catgtacata tgtatgtttt ggcatacaat   6480

gagtagttgg ggaaaaaatg tgtaaaagca ccgtgaccat cacagcataa agataaccag   6540

ctgaagtatc gaatatgagt aacccccaaa ttgaatcaca tgccgcaact gataggaccc   6600

atggaagtac actcttcatg gcgatataca agacacacac aagcacgaac acccagttgc   6660

ggaggaaatt ctccgtaaat gaaaacccaa tcggcgaaca attcataccc atatatggta   6720

aaagttttga acgcgacttg agagcggaga gcattgcggc tgataaggtt ttagcgctaa   6780

gcgggctta taaacgggc tgcgggacca gttttcatat cactaccgtt tgagttcttg   6840

tgctgtgtgg atactcctcc cgacacaaag ccgctccatc agccagcagt cgtctaatcc   6900

agagaccccg gatctagaac caaaatggct agcaaaggag aagaactttt cactggagtt   6960

gtcccaattc ttgttgaatt agatggtgat gttaatgggc acaaattttc tgtcagtgga   7020

gagggtgaag gtgatgcaac atacggaaaa cttaccctta aatttatttg cactactgga   7080

aaactacctg ttccatggcc aacacttgtc actactttca cttatggtgt tcaatgcttt   7140

tcaagatacc cagatcatat gaaacagcat gacttttca agagtgccat gcccgaaggt   7200

tatgtacagg aaagaactat attttcaaa gatgacggga actacaagac acgtgctgaa   7260

gtcaagtttg aaggtgatac ccttgttaat agaatcgagt taaaaggtat tgattttaaa   7320

gaagatggaa acattcttgg acacaaattg gaatacaact ataactcaca caatgtatac   7380

atcatggcag acaaacaaaa gaatggaatc aaagttaact tcaaaattag acacaacatt   7440

gaagatggaa gcgttcaact agcagaccat tatcaacaaa atactccaat tggcgatggc   7500

cctgtccttt taccagacaa ccattacctg tccacacaat ctgccctttc gaaagatccc   7560

aacgaaaaga gagaccacat ggtccttctt gagtttgtaa cagctgctgg gattacacat   7620

ggcatggatg aactatacaa ataaggatcc atgagcaatt agcatgaacg ttctgaaaag   7680

cgcgtttagc tctccactac ttacacatat tctatgctgc aatattgaaa atctaataaa   7740

caaaactaat gtacattaat tcttcagttt tgaatatcct tctcctgact ttcttatta   7800

gaattaatat aatactgcat acattaatac tgtaaatatg ataagtacct gcaaaacact   7860

gcagctcaag tcttaatgag gttctgcgat agcttagcat aattagtaac ttatcgcgca   7920

gaattcccta atgttcccga cctacatgta cttctgatag ttgccgaggt caaatgttgt   7980

tgtatttgta ttatacctca atattggtat attcaatatc taatagtacc caattcaatt   8040

gcaaagatag tcattaaaaa aacctaaatc acttgcaaat tgacttttct gccggaaaag 8100

caaccttgac acacaaagtt aattagttta tctggaagtc atgtgagaaa tttgtaaata 8160

aaatttttcg cagtaattta agtgggccta atccctttta agcatcttgg ttttacgatg 8220

acaccgcaat aaggtacaac tttatattgt ttttgcaatc agcttgagtc tttattaggc 8280

atcagtcttt ctctctaagt ttcttcgtgc aataaatgag gttccaaact ccgtagattt 8340

ttccttcttt gttgaatcca gatcctgcaa agaaaaaaga gcaaacccct aggtctgtcc 8400

aggaatgtat tttcgtgttt gtcgatcgac catggtcacc ggtagatatc tataacaaga 8460

aaatatatat ataataagtt atcacgtaag tagaacatga aataacaata taattatcgt 8520

atgagttaaa tcttaaaagt cacgtaaaag ataatcatgc gtcattttga ctcacgcggt 8580

cgttatagtt caaaatcagt gacacttacc gcattgacaa gcacgcctca cgggagctcc 8640

aagcggcgac tgagatgtcc taaatgcaca gcgacggatt cgcgctattt agaaagagag 8700

agcaatattt caagaatgca tgcgtcaatt ttacgcagac tatctttcta gggttaagtc 8760

gacatccaca ttgtggccaa gctgtgtgac gcgacgcgcg ctaaagaatg gcaaaccaag 8820

tcgcgcgagc gtcgaaattc gtaatcatgg tcatagctgt ttcctgtgtg aaattgttat 8880

ccgctcacaa ttccacacaa catacgagcc ggaagcataa agtgtaaagc ctggggtgcc 8940

taatgagtga gctaactcac attaattgcg ttgcgctcac tgcccgcttt ccagtcggga 9000

aacctgtcgt gccagctgca ttaatgaatc ggccaacgcg cggggagagg cggtttgcgt 9060

attgggcgct cttccgcttc ctcgctcact gactcgctgc gctcggtcgt tcggctgcgg 9120

cgagcggtat cagctcactc aaaggcggta atacggttat ccacagaatc aggggataac 9180

gcaggaaaga acatgtgagc aaaaggccag caaaaggcca ggaaccgtaa aaaggccgcg 9240

ttgctggcgt ttttccatag gctccgcccc cctgacgagc atcacaaaaa tcgacgctca 9300

agtcagaggt ggcgaaaccc gacaggacta taaagatacc aggcgtttcc ccctggaagc 9360

tccctcgtgc gctctcctgt ccgaccctg ccgcttaccg gatacctgtc cgcctttctc 9420

ccttcgggaa gcgtggcgct ttctcaatgc tcacgctgta ggtatctcag ttcggtgtag 9480

gtcgttcgct ccaagctggg ctgtgtgcac gaacccccg ttcagcccga ccgctgcgcc 9540

ttatccggta actatcgtct tgagtccaac ccggtaagac acgacttatc gccactggca 9600

gcagccactg gtaacaggat tagcagagcg aggtatgtag gcggtgctac agagttcttg 9660

aagtggtggc ctaactacgg ctacactaga aggacagtat ttggtatctg cgctctgctg 9720

aagccagtta ccttcggaaa aagagttggt agctcttgat ccggcaaaca aaccaccgct 9780

ggtagcggtg gtttttttgt ttgcaagcag cagattacgc gcagaaaaaa aggatctcaa 9840

gaagatcctt tgatcttttc tacggggtct gacgctcagt ggaacgaaaa ctcacgttaa 9900

Page 15

```
gggattttgg tcatgagatt atcaaaaagg atcttcacct agatcctttt aaattaaaaa    9960

tgaagtttta aatcaatcta aagtatatat gagtaaactt ggtctgacag ttaccaatgc   10020

ttaatcagtg aggcacctat ctcagcgatc tgtctatttc gttcatccat agttgcctga   10080

ctccccgtcg tgtagataac tacgatacgg gagggcttac catctggccc cagtgctgca   10140

atgataccgc gagacccacg ctcaccggct ccagatttat cagcaataaa ccagccagcc   10200

ggaagggccg agcgcagaag tggtcctgca actttatccg cctccatcca gtctattaat   10260

tgttgccggg aagctagagt aagtagttcg ccagttaata gtttgcgcaa cgttgttgcc   10320

attgctacag gcatcgtggt gtcacgctcg tcgtttggta tggcttcatt cagctccggt   10380

tcccaacgat caaggcgagt tacatgatcc cccatgttgt gcaaaaaagc ggttagctcc   10440

ttcggtcctc cgatcgttgt cagaagtaag ttggccgcag tgttatcact catggttatg   10500

gcagcactgc ataattctct tactgtcatg ccatccgtaa gatgcttttc tgtgactggt   10560

gagtactcaa ccaagtcatt ctgagaatag tgtatgcggc gaccgagttg ctcttgcccg   10620

gcgtcaatac gggataatac cgcgccacat agcagaactt taaaagtgct catcattgga   10680

aaacgttctt cggggcgaaa actctcaagg atcttaccgc tgttgagatc cagttcgatg   10740

taacccactc gtgcacccaa ctgatcttca gcatctttta ctttcaccag cgtttctggg   10800

tgagcaaaaa caggaaggca aaatgccgca aaaaagggaa taagggcgac acggaaatgt   10860

tgaatactca tactcttcct ttttcaatat tattgaagca tttatcaggg ttattgtctc   10920

atgagcggat acatatttga atgtatttag aaaaataaac aaataggggt tccgcgcaca   10980

tttccccgaa aagtgccacc tgacgtctaa gaaaccatta ttatcatgac attaacctat   11040

aaaaataggc gtatcacgag gccctttcgt ctcgcgcgtt tcggtgatga cggtgaaaac   11100

ctctgacaca tgcagctccc ggagacggtc acagcttgtc tgtaagcgga tgccgggagc   11160

agacaagccc gtcagggcgc gtcagcgggt gttggcgggt gtcggggctg gcttaactat   11220

gcggcatcag agcagattgt actgagagtg caccatatat gcggtgtgaa ataccgcaca   11280

gatgcgtaag gagaaaatac cgcatcaggc gccattcgcc attcaggctg cgcaactgtt   11340

gggaagggcg atcggtgcgg gcctcttcgc tattacgcca gctggcgaaa gggggatgtg   11400

ctgcaaggcg attaagttgg gtaacgccag ggttttccca gtcacgacgt tgtaaaacga   11460

cggccagtgc caagctttgt ttaaaatata acaaaattgt gatcccacaa aatgaagtgg   11520

ggcaaaatca ataattaat agtgtccgta aacttgttgg tcttcaactt tttgaggaac    11580

acgttggacg gcaaatccgt gactataaca caagttgatt taataatttt agccaacacg   11640

tcgggctgcg tgttttttgc cgacgcgtct gtgtacacgt tgattaactg gtcgattaaa   11700

ctgttgaaat aatttaattt ttggttcttc tttaaatctg tgatgaaatt ttttaaaata   11760

actttaaatt cttcattggt aaaaaatgcc acgttttgca acttgtgagg gtctaatatg   11820
```

```
aggtcaaact cagtaggagt tttatccaaa aaagaaaaca tgattacgtc tgtacacgaa   11880

cgcgtattaa cgcagagtgc aaagtataag agggttaaaa aatatatttt acgcaccata   11940

tacgcatcgg gttgatatcg ttaatatgga tcaatttgaa cagttgatta acgtgtctct   12000

gctcaagtct ttgatcaaaa cgcaaatcga cgaaaatgtg tcggacaata tcaagtcgat   12060

gagcgaaaaa ctaaaaaggc tagaatacga caatctcaca gacagcgttg agatatacgg   12120

tattcacgac agcaggctga ataataaaaa aattagaaac tattatttaa ccctagaaag   12180


ataatcatat tgtgacgtac gttaaagata atcatgcgta aaattgacgc atgtgtttta   12240

tcggtctgta tatcgaggtt tatttattaa tttgaataga tattaagttt tattatattt   12300

acacttacat actaataata aattcaacaa acaatttatt tatgtttatt tatttattaa   12360

aaaaaaacaa aaactcaaaa tttcttctat aaagtaacaa aacttttaaa cattctctct   12420

tttacaaaaa taaacttatt ttgtacttta aaaacagtca tgttgtatta taaaataagt   12480

aattagctta acttatacat aatagaaaca aattatactt attagtcagt cagaaacaac   12540

tttggcacat atcaatatta tgctctcgac aaataacttt tttgcatttt ttgcacgatg   12600

catttgcctt tcgccttatt ttagaggggc agtaagtaca gtaagtacgt tttttcatta   12660

ctggctcttc agtactgtca tctgatgtac caggcacttc atttggcaaa atattagaga   12720

tattatcgcg caaatatctc ttcaaagtag gagcttctaa acgcttacgc ataaacgatg   12780

acgtcaggct catgtaaagg tttctcataa attttttgcg actttggacc ttttctccct   12840

tgctactgac attatggctg tatataataa aagaatttat gcaggcaatg tttatcattc   12900

cgtacaataa tgccataggc cacctattcg tcttcctact gcaggtcatc acagaacaca   12960

tttggtctag cgtgtccact ccgcctttag tttgattata atacataacc atttgcggtt   13020

taccgggcgc ctcttaatta aggccccccc tcgagaccat ggtcgatcga caaacacgaa   13080

aatacattcc tggacagacc taggggtttg ctcttttttc tttgcaggat ctggattcaa   13140

caaagaagga aaaatctacg gagtttggaa cctcatttat tgcacgaaga aacttagaga   13200

gaaagactga tgcctaataa agactcaagc tgattgcaaa aacaatataa agttgtacct   13260

tattgcggtg tcatcgtaaa accaagatgc ttaaaaggga ttaggcccac ttaaattact   13320

gcgaaaaatt ttatttacaa atttctcaca tgacttccag ataaactaat taactttgtg   13380

tgtcaaggtt gcttttccgg cagaaaagtc aatttgcaag tgatttaggt ttttttaatg   13440

actatctttg caattgaatt gggtactatt agatattgaa tataccaata ttgaggtata   13500

atacaaatac aacaacattt gacctcggca actatcagaa gtacatgtag gtcgggaaca   13560

ttagggaatt ctgcgcgata agttactaat tatgctaagc tatcgcagaa cctcattaag   13620

acttgagctg cagtgttttg caggtactta tcatatttac agtattaatg tatgcagtat   13680
```

```
tatattaatt ctaaataaga aagtcaggag aaggatattc aaaactgaag aattaatgta    13740
cattagtttt gtttattaga ttttcaatat tgcagcatag aatatgtgta agtagtggag    13800
agctaaacgc gcttttcaga acgttcatgc taattgctca tggatctcac aggaacaggt    13860
ggtggcggcc ctcggtgcgc tcgtactgct ccacgatggt gtagtcctcg ttgtgggagg    13920
tgatgtccag cttggcgtcc acgtagtagt agccgggcag ctgcacgggc ttcttggcca    13980
tgtagatgga cttgaactcc accaggtagt ggccgccgtc cttcagcttc agggccttgt    14040
gggtctcgcc cttcagcacg ccgtcgcggg ggtacaggcg ctcggtggag gcctcccagc    14100
ccatggtctt cttctgcatc acggggccgt cggaggggaa gttcacgccg atgaacttca    14160
ccttgtagat gaagcagccg tcctgcaggg aggagtcctg ggtcacggtc gccacgccgc    14220
cgtcctcgaa gttcatcacg cgctcccact tgaagccctc ggggaaggac agcttcttgt    14280
agtcggggat gtcggcgggg tgcttcacgt acaccttgga gccgtactgg aactgggggg    14340
acaggatgtc ccaggcgaag ggcagggggc cgcccttggt caccttcagc ttcacggtgt    14400
tgtggccctc gtaggggcgg ccctcgccct cgccctcgat ctcgaactcg tggccgttca    14460
cggtgccctc catgcgcacc ttgaagcgca tgaactcggt gatgacgttc tcggaggagg    14520
ccattctagc cattttggtt ctagatggca gttgtttatc tggaagggag atggaagtgc    14580
actcggttag ctcgatctgt cgattatata tgtaaagttt tatagctccc acctacatct    14640
caattcttta aattctacta ctttaatgac aacatagaaa actaatttgt gtctcaagaa    14700
aatatttaac tttttaagat attgaagaag tgaagtgaaa ctctattgtc catttgagca    14760
catttcagta aataaaacca tgaaaaattg ccaaaattgg tatattccat ttccttttga    14820
gtcatgctaa ttggttattc acttgaaact aaatcagtgc tctaaaaata tcggaaaaga    14880
atagttcata gaacttaatt taaacgtatc aaattaattg aaaatacgtt tcgttgcaat    14940
tactcttcac tttatattta gatattgaac tttcgaagac cgattagtga cttgtagaaa    15000
aatccatcaa acaatccgaa cttattaaaa agagttttaa tatccttagt cctcttggct    15060
ttttctgtaa taatccttgg atccttcgac attgaggtcg cactcacaca cctttaggt    15120
caacgaaagg agaaaaattg gatagagtcg cacgttcgat tcctgttgac aactagattc    15180
aacaacaaat ggcacgccga tcggtctgtc ctgcctttat atctcggctc tccctcgaag    15240
cgatttgagt tggatgccag tgcggcactg agaaaaagat tgagcgaaag tgctgcggaa    15300
caatcaactc gaatcgatcc atataagcag ttttcagact tctggccgag catgtcagaa    15360
gtttggatgc ctcattgcac gaagacgact cattaatgcg cttcacaaaa aaaggaagcc    15420
acacaattaa atacttaata aagcatagaa tcatttatta agattaccaa taaattcaat    15480
aaacgaggga atttccaaac tgcgaaaata tgacatttta tatttttttc acattgttag    15540
```

```
taggtacaaa tcctagaaaa tggtctcata acatataaca gcttaaataa ctatgtagta   15600

gaagataaac tttatgttca attcagttca tatttaatcc tagaaatatt taattaattg   15660

acaatatatg atggaagtaa gctatcaatc ttaggaccct attcattatt tgtagggagt   15720

gccaggagag agaaagctct cgaaagataa gagaacgcca tagccgagtg attagcagag   15780

gtgcgtgata gtcggtgtat gggccaccta aacggcaatc agcactctcg agtggccaat   15840

tagccccatc tccgtcccca tctctgtccc aatcctgctg ccaatgggcg actgctgcgg   15900

cggacgactc attcggtgct gagagttcgg aaaatagaaa cggaccttag aaggaccgac   15960

gcaagacaat tggcatccgc ggcagggact gggagaatgg gacatttcaa cgggcacgca   16020


gcgaggcgaa tctaaaatag acgcgccaag cagagcggca cctataaatc aacatcaagg   16080

ttgatcgaga tatccaccca tctgcggccg ccatgcgtca attttacgca gactatcttt   16140

ctagggttaa tcagccc                                                 16157
```

```
<210>  5
<211>  531
<212>  DNA
<213>  Drosophila melanogaster

<400>  5
gaaatcgatt gcggaaacca ttgcttagtt tttgattgac ctttgtttga aaacaaaata    60

tatgtataaa ggaattattt gaaagtacga gcggtttgtt gtcatattgg tgggattttt   120

ggctatttca ttttaattaa gttttttgaa tttaaatgtt tcatttagct acattcagaa   180

atattgtttt gaatttaaaa aatttacagt gtgaatgtct tgaattttc aattggaaaa   240

aaaaggatga tggttgaagt atccgctttg tttattacag tagactggtc acactgccag   300

ctgctaaata atagaaaaca gtctgcgtgg acaaacattt aattaaaatg aatgtaagca   360

cttttttaacg aaatctttgg gaatatttcg ctcatcagca ttttatttga gcaggagtcc   420

gagtccccat cgacatacac acgctgaagc tgcaggactg gctgatcagc cgcagaattg   480

tgccaagaat gtgcagcagg agcttaggga gatccacagg aagattagca a            531
```

```
<210>  6
<211>  25
<212>  DNA
<213>  Artificial sequence

<220>
<223>  Synthetic


<400>  6
gccagtcctg cagcttcagc gtgtg                                          25
```

```
<210>  7
<211>  26
<212>  DNA
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  7
aaaggtatga tggttgaagt atccgc                                      26


<210>  8
<211>  26
<212>  DNA
<213>  Artificial sequence

<220>
<223>  Synthetic


<400>  8
ccttctttgt tgaatccaga tcctgc                                      26


<210>  9
<211>  23
<212>  DNA
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  9
gctcctgggc aacgtgctgg ttg                                         23


<210>  10
<211>  32
<212>  DNA
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  10
ggtggctagc ttgcgcttct tcttgggtgg gg                               32


<210>  11
<211>  53
<212>  DNA
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  11
ggtgggcgcg cccaattgcc cgggctttttt aaccctagaa agatagtctg cgt        53


<210>  12
<211>  40
```

```
<212>  DNA
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  12
gcccaagctt gcggccgcgt cattttgact cacgcggtcg                    40


<210>  13
<211>  29
<212>  DNA
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  13
gatttgattc agagttgatg ccattcatg                               29


<210>  14
<211>  25
<212>  DNA
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  14
ccagacctcc accttcaagg tgacc                                   25


<210>  15
<211>  27
<212>  DNA
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  15
ttgtaggagg tgtggaactg gcatctg                                 27


<210>  16
<211>  25
<212>  DNA
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  16
caacaccgtg aagctgaagg tgacc                                   25


<210>  17
<211>  28
<212>  DNA
<213>  Artificial sequence
```

```
<220>
<223>  Synthetic

<400>  17
cttggccatg tagatggact tgaactcc                                      28


<210>  18
<211>  22
<212>  DNA
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  18
caagcaggcc atcaacctgt gc                                            22


<210>  19
<211>  24
<212>  DNA
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  19
gacttggcct tgtacacggt gtcg                                          24


<210>  20
<211>  10
<212>  DNA
<213>  Artificial sequence

<220>
<223>  Synthetic


<220>
<221>  misc_feature
<222>  (2)..(2)
<223>  n is a, c, g, or t

<220>
<221>  misc_feature
<222>  (9)..(9)
<223>  n is a, c, g, or t

<400>  20
wnwttaawnw                                                          10
```